

# **Speed Dome 66 Installation Manual**

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## **Welcome**

Thank you for purchasing our speed dome!

**Please read the following safeguards and warnings carefully before you install or use the product!**

# Important Safeguards and Warnings

## Safety Measures

### Qualified Engineer Needed

- The installation engineer or maintenance engineer shall have corresponding CCTV system installation certificate or maintenance qualification certificate.
- The installation engineer or maintenance engineer shall have qualification certificate for work at height.
- The installation engineer or maintenance engineer shall have the basic knowledge and operation technique for low-voltage cable layout and low-voltage electronic cable connection.
- Please read the installation manual carefully and keep it well for future reference,
- We are not liable for any problems caused by unauthorized modifications or attempted repair.

### Lifting Appliance Requirement

- Please select the proper speed dome installation mode and use the lifting appliances at the safety environment.
- The lifting appliances shall have the enough capacity to reach the installation height.
- The lifting appliances shall have safe performance.

## Precautions

### Safety Transportation

- Heavy stress, violent vibration or water splash are not allowed during transportation, storage and installation.
- This series product must use split type package during the transportation.
- We are not liable for any damage or problem result from the integrated package during the transportation.

### When device is malfunction

Shut down the device and disconnect the power cable immediately if there is smoke, abnormal smell or abnormal function. Please contact your local retailer ASAP.

**Do not try to dismantle or modify the device**

- There is risk of personal injury or device damage resulting from opening the shell.
- Please contact your local retailer if there is internal setup or maintenance requirement.
- We are not liable for any problems caused by unauthorized modifications or attempted repair.

**Do not allow other object falling into the device**

- Please make sure there is no metal or inflammable, explosive substance in the speed dome.
- The above mentioned objects in the device may result in fire, short-circuit or damage.
- Please shut down the device and disconnect the power cable if there is water or liquid falling into the camera. Please contact your local retailer ASAP.
- Please pay attention to the camera. Avoid the sea water or rain to erode the camera.

**Handle carefully**

Do not allow this series product fall down to the ground.  
Avoid heavy vibration.

**Installation Environment Requirement**

- This series speed dome should be installed in a cool, dry place away from direct sunlight, inflammable, explosive substances and etc.
- This series product shall be away from the strong electromagnetism radiant, please keep it away from wireless power, TV transmitter, transformer and etc.

**Daily Maintenance**

- Please use the soft cloth to clean dust on the shell, or you can use soft cloth with cleaning liquid to clean the shell and then use soft cloth to make it dry.
- Do not use gasoline, dope thinner or other chemical material to clean the shell. It may result in shell transfiguration or paint flake.
- Do not allow the plastic or rubber material to touch the shell for a long time. It may result in paint flake.

# 1 INSTALLATION

## 1.1 Installation Preparation

### Basic Requirement

- All installation and operation here should conform to your local electrical safety codes.
- Before installation, please open the package and check all the components are included. Please make sure the speed dome installation environment and installation mode can meet your requirement. If there is special requirement, please contact your local retailer for more information.
- We assume no liability or responsibility for all the fires or electrical shock caused by improper handling or installation.

### Check installation space and installation location intension

Please make sure the installation environment has enough space to install the speed dome and its corresponding bracket.

Please make sure the ceiling, wall, bracket can support the speed dome and its corresponding installation component. The safety factor shall be 4X.

### About cable

Please select the cable according to your transmission distance.

The minimum video coaxial-cable requirement is:

- 75 ohm.
- Full cable with copper conductor
- 95% knitted copper shield

International Model	Max Distance (Ft/M)
RG59/U	750ft (229m)
RG6/U	1,000ft (305m)
RG11/U	1,500ft (457m)

### Set dial switch button

Set dial switch button according to control protocol and speed dome address.  
(Please refer to user's manual for detailed information.)

### Please keep all package material well for future use

Please keep speed dome package material well in case you need to send it back to your local retailer or manufacturer for maintenance work.

Non-original package material may result in device damage during the transportation.

## 1.2 Installation Mode

### 1.2.1 Speed Dome Installation Mode

The integrated speed dome has the following installation modes:

- Embedded installation
- In-ceiling installation
- Bracket installation

### 1.2.2 Bracket Installation Mode

The bracket installation consists of the following modes:

- Hanging installation
- Corner installation
- Pole installation
- Suspended installation

The bracket installation is suitable for indoor and outdoor environment. The outdoor speed dome has a sun-shade cover and it also has an internal heater device.

The outdoor speed dome IP standard is IP 66.

#### 1.2.2.1 Hanging Installation

This series installation mode is suitable for indoor and outdoor hard wall structure.

See Figure 1-1. Please refer to chapter 2.2 for detailed information.

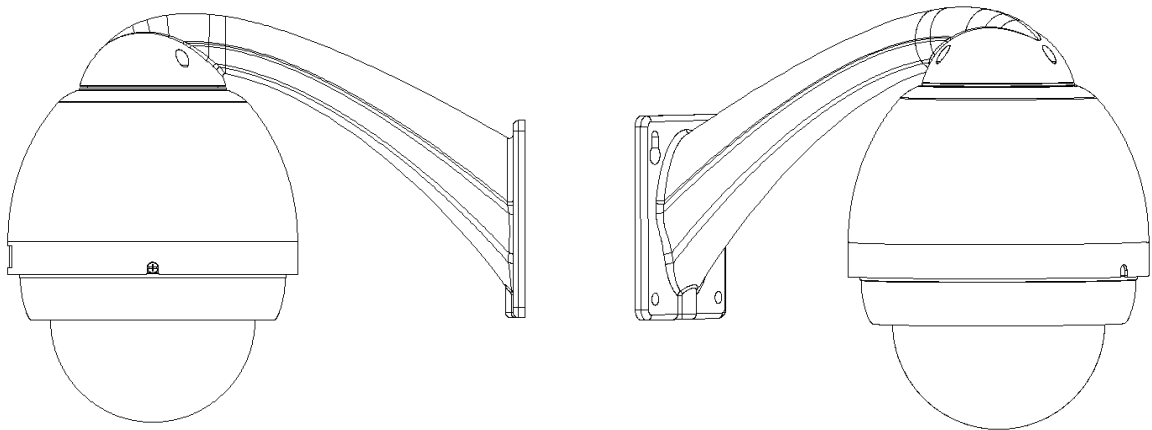


Figure 1-1

#### 1.2.2.2 Corner Installation

The corner installation is suitable for indoor and outdoor hard wall structure

environment where the angle is 90 degrees. See Figure 1-2. Please refer to chapter 2.3 for detailed information.

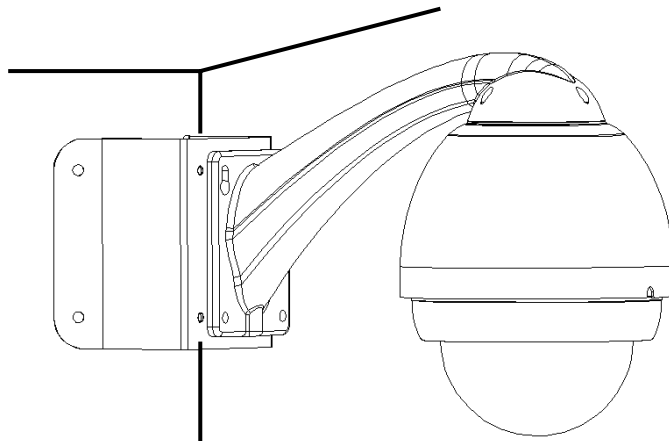


Figure 1-2

#### 1.2.2.3 Pole Installation

Pole installation is suitable for indoor and outdoor hard pole structure. See Figure 1-3. Please refer to chapter 2.4 for detailed information.

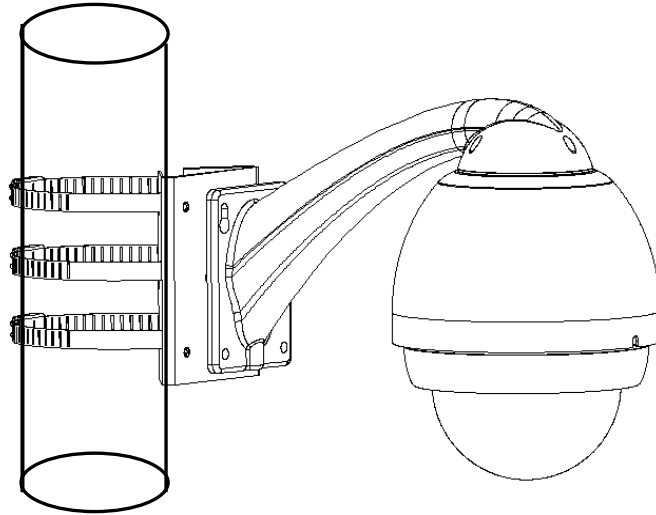
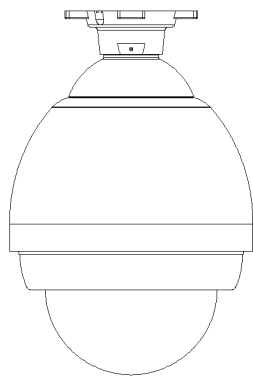


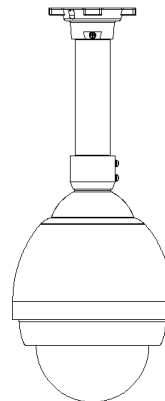
Figure 1-3

#### 1.2.2.4 Suspended Installation

The suspended installation has the following two types. Please refer to chapter 2.5 for detailed information. See Figure 1-4.



With Pole



Without Pole

Figure 1-4

## 2 SPEED DOME INSTALLATION

### 2.1 General Introduction

Speed dome consists of the following components. See Figure 2-1.

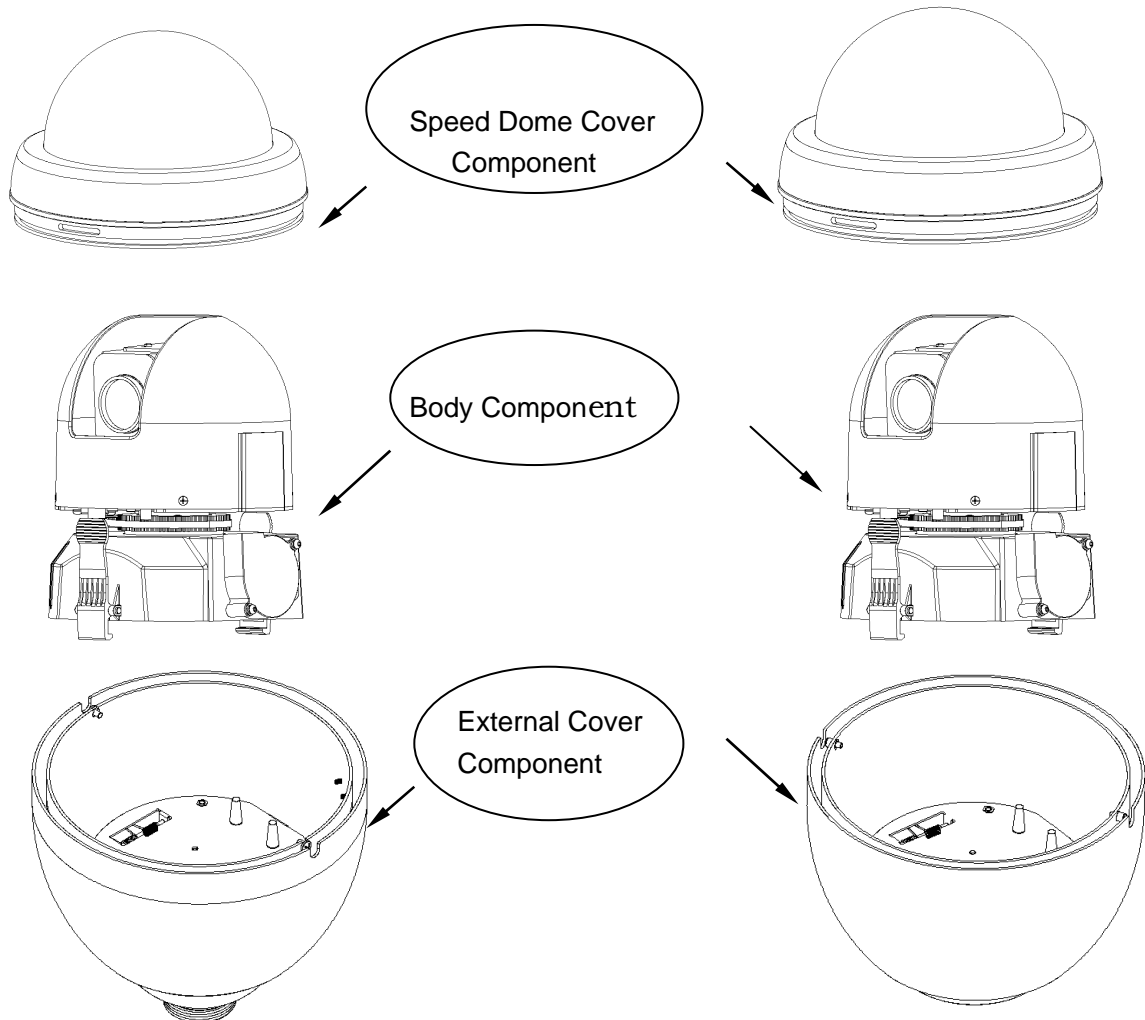


Figure 2-1

### 2.2 Hanging Bracket Speed Dome Installation

#### 2.2.1 Installation Requirement

The hanging bracket is suitable for indoor or outdoor hard wall structure.

The wall thickness shall support the expansion bolt.

The wall shall support the 4x speed dome weight.

#### 2.2.2 Hanging Bracket Installation

Draw the hole position in the wall in accordance with the hanging bracket bottom installation pole. Then dig holes. Please refer to Figure 2-2.

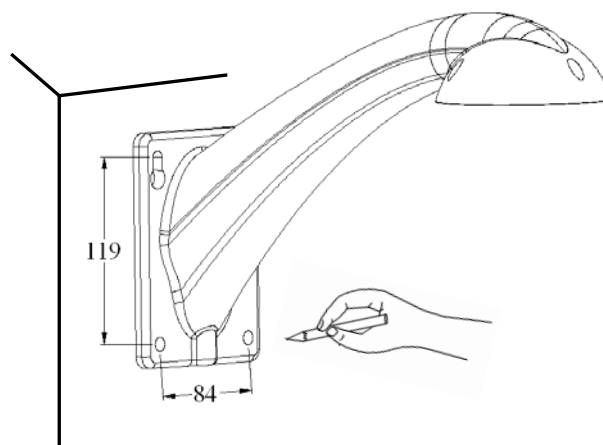


Figure 2-2

You can use socket head cap screw to fix hanging bracket and external cover component. (Please install waterproof sealing cushion)

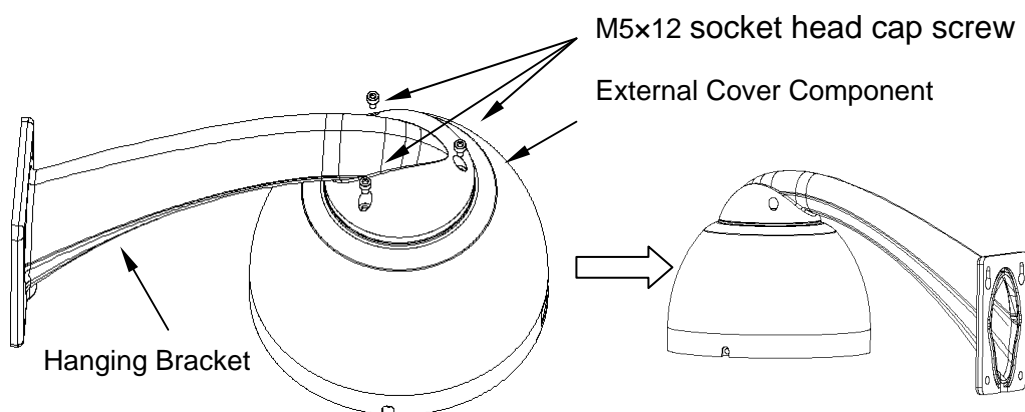


Figure 2-3

After you installed bracket and external cover components, loosen captive screws and open the panel. Draw the power cable through the hanging bracket and then fix the bracket in the wall. Please pay attention to the waterproof between the bracket and then wall. See Figure 2-4.

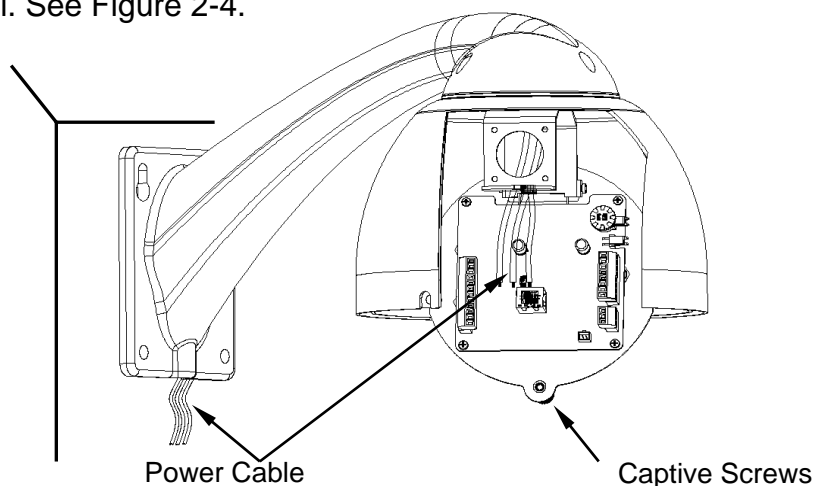


Figure 2-4

Then please follow Figure 2-5 to insert the power pin, video/control pin, alarm cable pin to the corresponding sockets in the outlet.

**Note:**

Please make sure the power is disconnected when you connect the power cable. After you connected the cable to the power, please check LED light in the power panel is on or not. You can refer to the error definition sheet for detailed information. Do remember fixing the captive screws after you closed the panel.

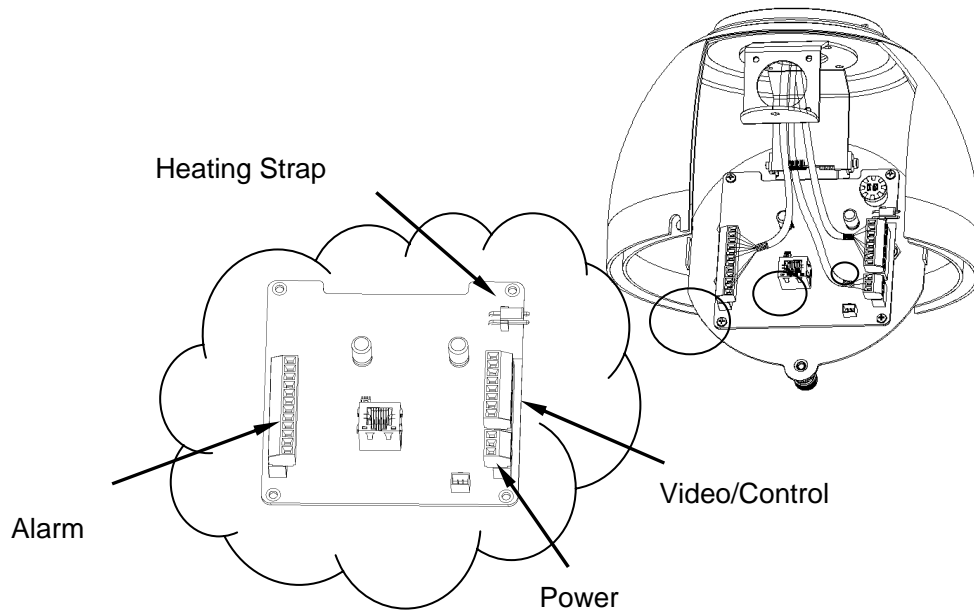


Figure 2-5

### 2.2.3 Camera Installation

Pull the camera out of the package. Please check there is any visible damage or not. Please refer to user's manual for dial switch SW2 and SW1 setup. Now you have set the speed dome baud rate, control protocol and speed dome address. See Figure 2-6.

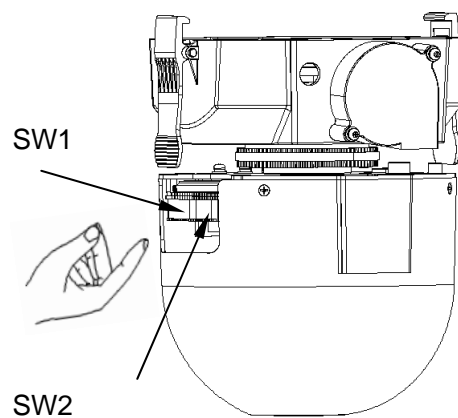


Figure 2-6

Please use your hand to hold the camera and then adjust the lock tab between the camera and the panel.

1— Captive screw and semi-circle groove.

2— AMP socket connector

3/4/5- three pilot spool

You can refer to Figure 2-7 for detailed information.

Now please turn the camera in the lock direction until the lock tab of the camera fixing bracket meets the lock line of the camera.

**Note:**

After you reached the proper position, you can hear two clear sounds such as ping, ping. Please draw the black camera cover down to the ground to check the installation is secure or not.

Please keep the package material well for future use.

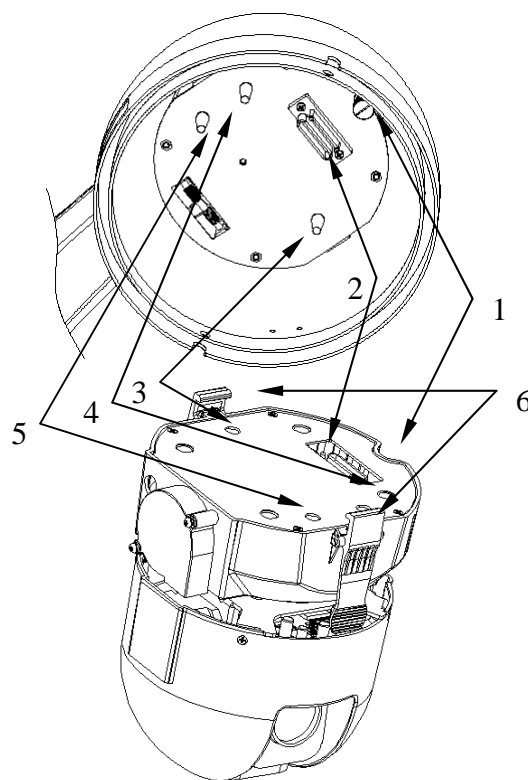


Figure 2-7

Connect the steel safety rope (Loosen the hexagon domed cap nut of the external cover and then push the safety rope to the squeeze screw, finally fix the hexagon domed cap nut). Connect to the heating strips (insert the spring cable cap to the heating strips cap.) See Figure 2-8.

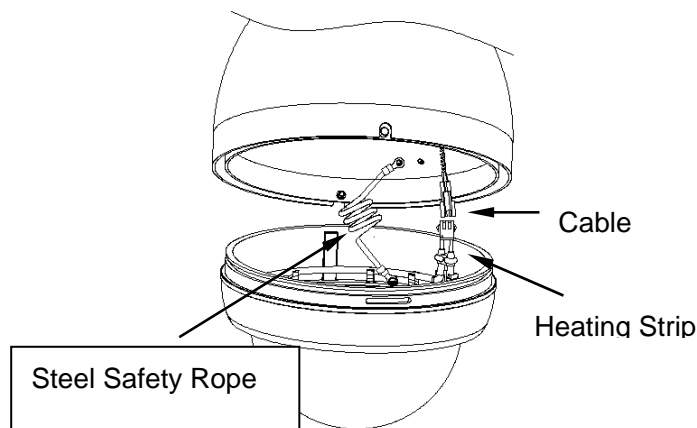


Figure 2-8

Please refer to Figure 2-9 to install bottom cover.

Please line the two round grooves of bottom cover side to the two captive screws on the bottom cover side. The angel shall ranges from -5 degrees to +5 degrees. Then you can push the bottom cover up and fix the captive screws.

You can find the lubricating grease in the accessories package.

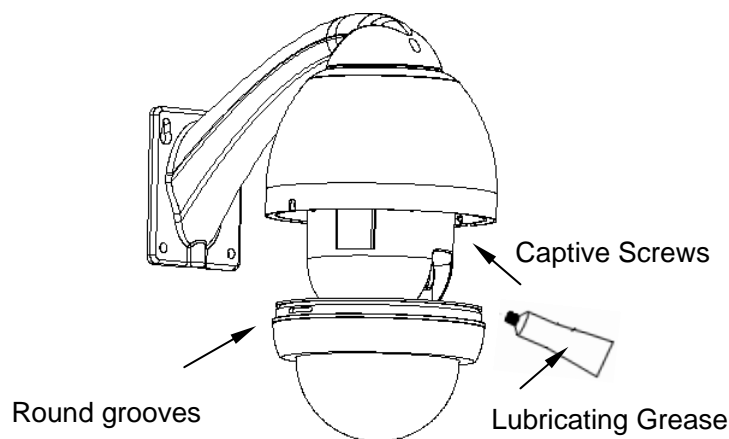


Figure 2-9

## 2.3 Corner Bracket Speed Dome Installation

### 2.3.1 Installation Requirement

The corner installation speed dome is suitable for indoor or outdoor hard wall environment where the angel is 90 degrees.

The wall thickness shall support the expansion bolt.

The wall shall support the 4x speed dome weight.

### 2.3.2 Corner Bracket and Hanging Bracket Installation

Take the corner bracket as template, draw the hole position in the 90 degrees wall. Then you can dig holes and fix the M8 expansion bolts firmly. See Figure 2-10.

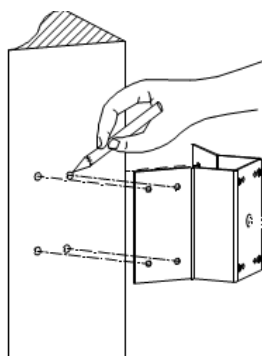


Figure 2-10

Pull the power cable, video/control, alarm cable through the bottom central hole, waterproof grommet and bracket central hole. Please reserve the enough cable length and then use M8 expansion bolt to fix the corner bracket pedestal in the wall. See Figure 2-11.

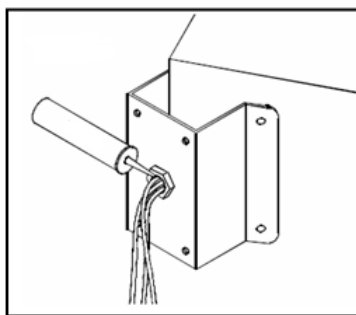


Figure 2-11

Pull the power, video/control, alarm cable through the hanging bracket and then fix the hang bracket in the corner accessories. See Figure 2-12.

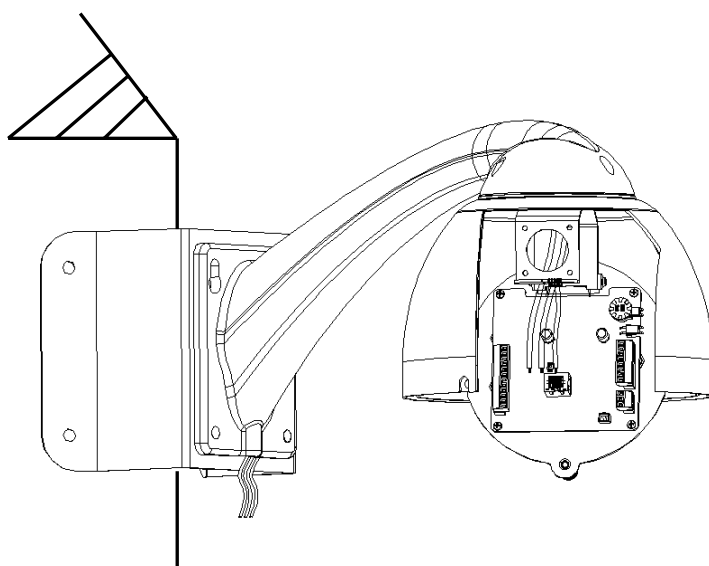


Figure 2-12

Cable connection: Please refer to Figure 2-5.

Bottom cover connection: Please refer to Figure 2-8.

Camera installation: Please refer to Figure 2-7.

Bottom cover installation: Please refer to Figure 2-9.

After you completed the above steps, the corner installation is shown as in Figure 2-13.

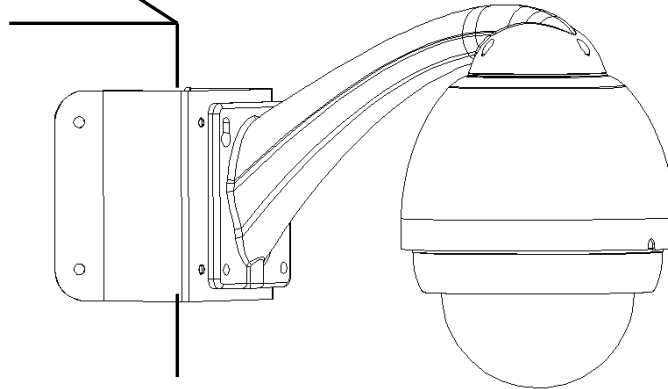


Figure 2-13

## 2.4 Pole Bracket Speed Dome Installation

### 2.4.1 Installation Requirement

The pole installation speed dome is suitable for indoor or outdoor hard structure pole environment.

The diameter of pole structure shall comply with the installation dimension of clamp.

Default factory clamp is six inches for the column of  $\phi 130$ -152mm. It can work with the pole installation bracket. You can adjust the diameter and the value (clamp specification) is :  $\phi 59$ -82mm、 $\phi 84$ -108mm、 $\phi 103$ -127mm

$\phi 130$ -152mm、 $\phi 155$ -178mm、 $\phi 180$ -203mm

$\phi 194$ -216mm.

The clamp is shown as in Figure 2-14.



Figure 2-14

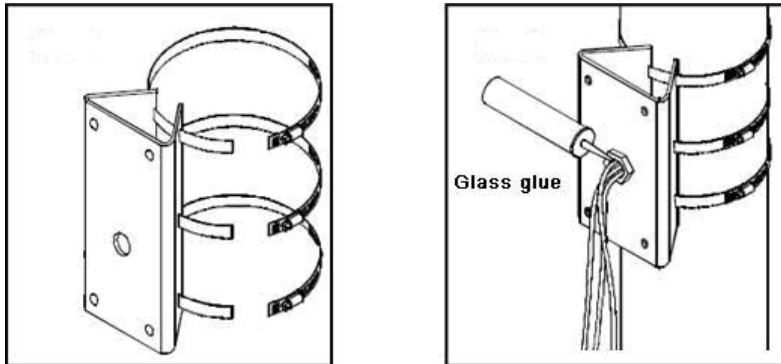
For special dimensions, please contact us for more information.

The pole structure shall support the speed dome weight.

### 2.4.2 Pole Bracket Installation

Please refer to Figure 2-15 to install clamp and pole bracket.

Pull the cable out of the pole accessories and then use clamp to fix the pole accessories to the pole. Finally, you can use glass cement to the output hole to secure waterproof.



Figure

2-15

After you installed bracket and external cover, loosen the captive screws and open the panel, pull the power cable through the hanging bracket and then fix the hanging bracket to the wall. Please pay attention to the waterproof between the bracket and the wall. See Figure 2-16.

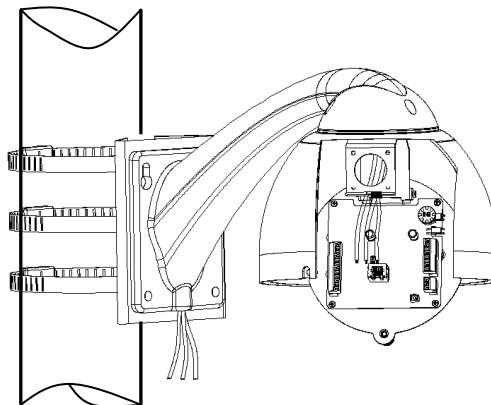


Figure 2-16

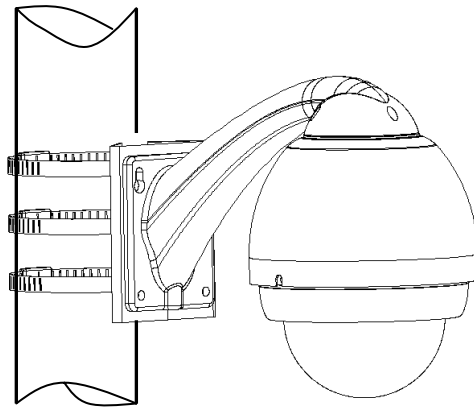
Cable connection: Please refer to Figure 2-5.

Bottom cover: Please refer to Figure 2-8.

Camera installation: Please refer to Figure 2-7.

Bottom cover installation: Please refer to Figure 2-9.

After you completed the above steps, the pole bracket installation is shown as in Figure 2-17.



## 2.5 Suspended Bracket Speed Dome Installation

### 2.5.1 Installation Requirement

Suspended bracket speed dome installation is suitable for indoor or outdoor hard structure ceiling.

The ceiling thickness can install expansion bolt.

The ceiling shall support the 4x speed dome weight.

### 2.5.2 Accessories Installation

The installation accessories are shown as in Figure 2-18.

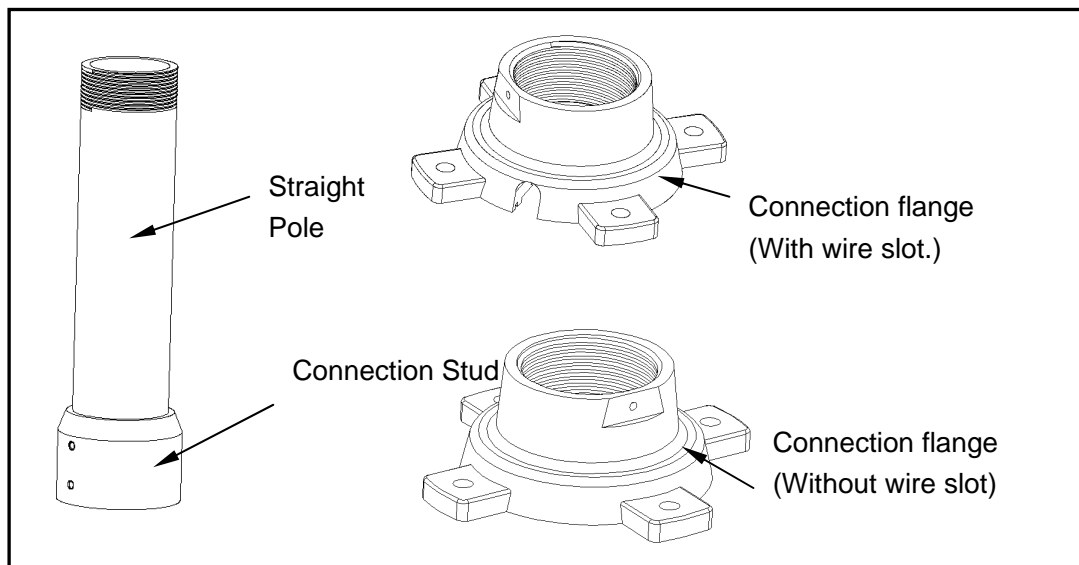


Figure 2-18

Suspended bracket mainly is connection flange (with or without wire slot). See Figure 2-19.

You can select from your actual requirement. The suspended bracket standard configuration consists of 200mm straight pole. There are 300mm or 500 mm connection pole too. For special dimension, please contact us for more information. If you use the flange without wire slot, you need to open a wire hole of 35mm in the installation panel.

For the flange with wire slot, please use the connection flange as template to draw out the pole position on the wall. Dig holes in the wall and then insert M6 expansion bolt.

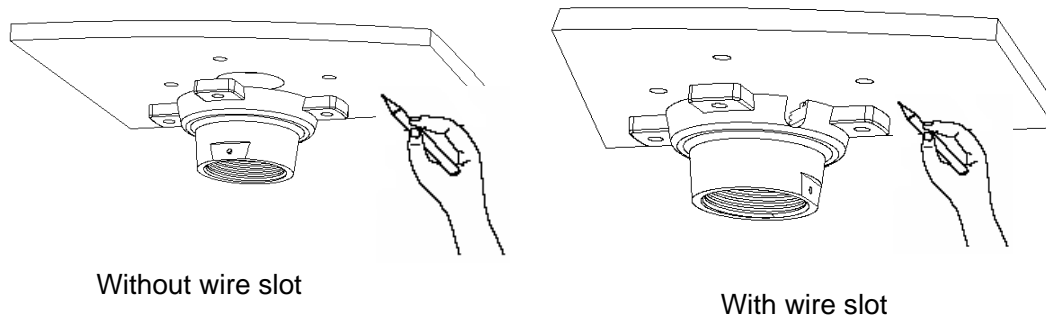


Figure 2-19

Loosen the M4 bolt in the flanges side. Separate the connection flange and pole and then pull the power, video/control, alarm cable out of the seal groove of flanges bottom side, and then lead them through the flanges central hole. Now you can fix the flange in the ceiling. See Figure 2-20.

Please note, if the speed dome is installed in outdoor environment. Please use silica gel to secure waterproof between the flange and ceiling, and position near wire slot.

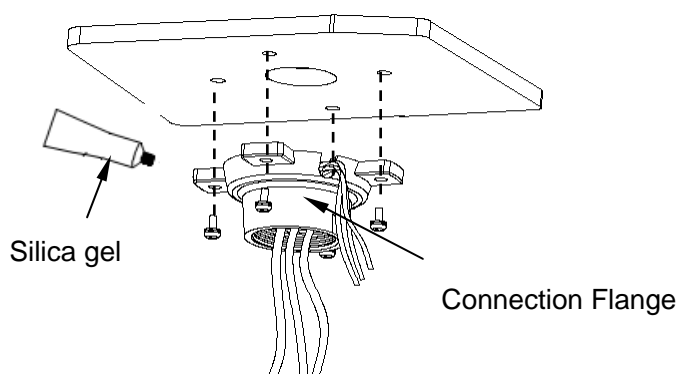


Figure 2-20

Now please follow Figure 2-21 to pull the power cable through the pole and then turn the pole to the connection flange firmly. Fix the M4 screw.

If the speed dome is installed in the outdoor environment, please enlase enough Teflon tape at the screw thread of pole and then turn the pole to the connection flange firmly.

Please use silica gel to secure waterproof between pole connection splicing (coupling) sleeve and the connection port.

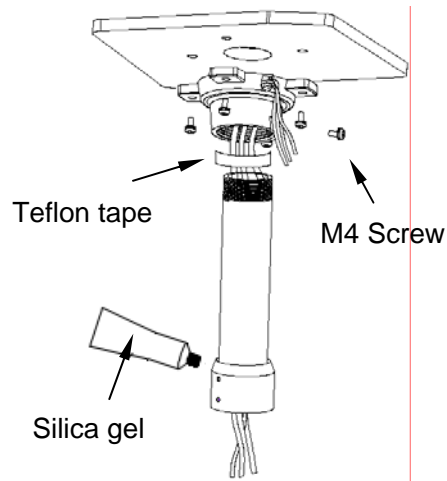


Figure 2-21

Please loosen the M4 bolt at the splicing sleeve of pole bottom (just a little will be O.K), then turn the screw thread of the upper cover splicing sleeve in. Now pull the power cable through the upper cover and then turn the upper cover to the pole splicing sleeve firmly. Fix the M4 bolt. Loosen the captive screw in the panel. See Figure 2-22.

Please note, if the speed dome is installed in outdoor environment, please enlance enough Teflon tape at the screw thread of pole and then turn the pole to the connection flange firmly.

Please use silica gel to secure waterproof between pole connection splicing (coupling) sleeve and the connection port.

Please refer to Figure 2-22 to loosen captive screw and then open panel.

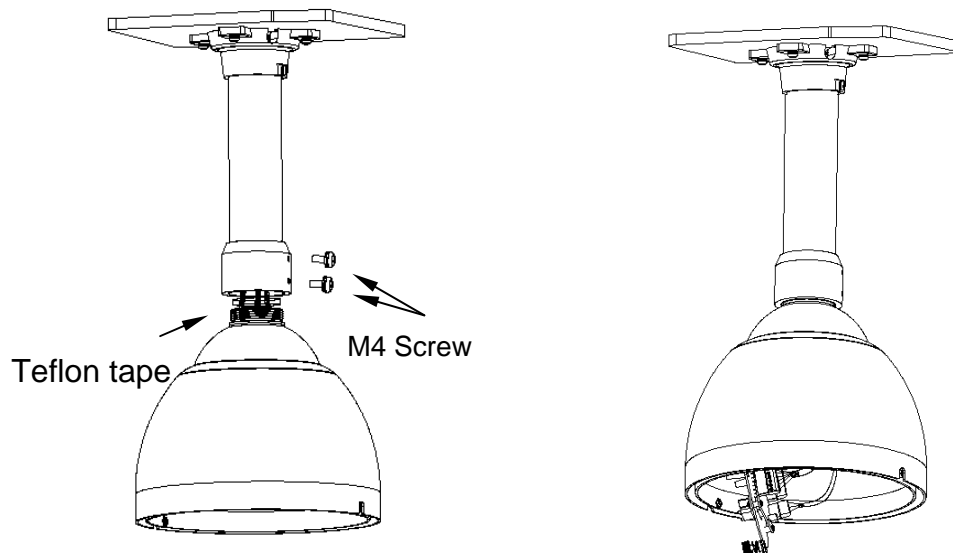


Figure 2-22

Cable connection: Please refer to Figure 2-5.

Bottom cover connection: Please refer to Figure 2-8.

Camera installation: Please refer to Figure 2-7.  
Bottom cover installation. Please refer to Figure 2-9.

### 3 Protocol, Baud Rate, Address setup

Before you operate, you need to set protocol, baud rate and address.  
Otherwise you can not control the product!

#### 3.1 Protocol and Baud Rate Setup

Please configure the following settings before begin controlling dome:

- Protocol
- Baud rate
- Address

**Note: Please reboot the speed dome to get all the setups activated!**

Open the lower dome, the interface is shown as below. See Figure 2-1.

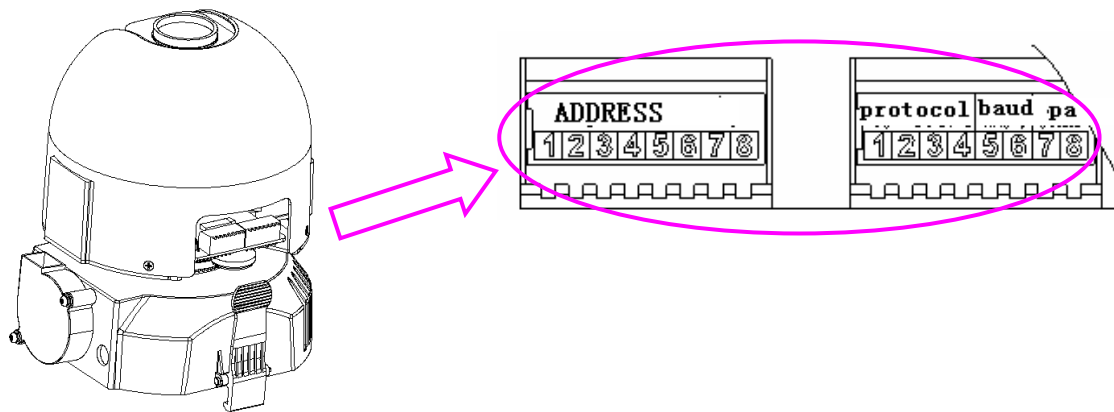


Figure 3-1

Please refer to the protocol sheets for detailed information.

Protocol				Baud rate		Parity	
1	2	3	4	5	6	7	8

1	2	3	4	Communication Protocol
OFF	OFF	OFF	OFF	DH-SD (Compatible with China industrial standard protocol)
ON	OFF	OFF	OFF	PELCO-D
OFF	ON	OFF	OFF	PELCO-P
X	X	X	X	Reserved

Please refer to the baud rate sheet for detailed information.

5	6	Baud Rate
---	---	-----------

OFF	OFF	9600bps
ON	OFF	4800bps
OFF	ON	2400bps
ON	ON	1200bps

Please refer to the parity setup sheet for detailed information.

7	8	Parity
OFF	OFF	NONE
ON	OFF	EVEN
OFF	ON	ODD
ON	ON	NONE

### 3.2 Set address dial switch

The encode mode adopts binary system. 1 to 8 is valid bit. The highest address bit is 255. You can refer to the following sheet for more information.

Address	1	2	3	4	5	6	7	8
1	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
8	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
.....	.....							
254	OFF	ON	ON	ON	ON	ON	ON	ON
255	ON	ON	ON	ON	ON	ON	ON	ON

## 4 Cable Connection

### 4.1 RS485 and Power Cable Connection

There are three cable groups: power cable, RS 485 and video cable. Draw out the cables from the dome to connect with main control devices (such as monitor, control keyboard, DVR and etc.) and power adapter. See Figure 3-1 and Figure 3-2.

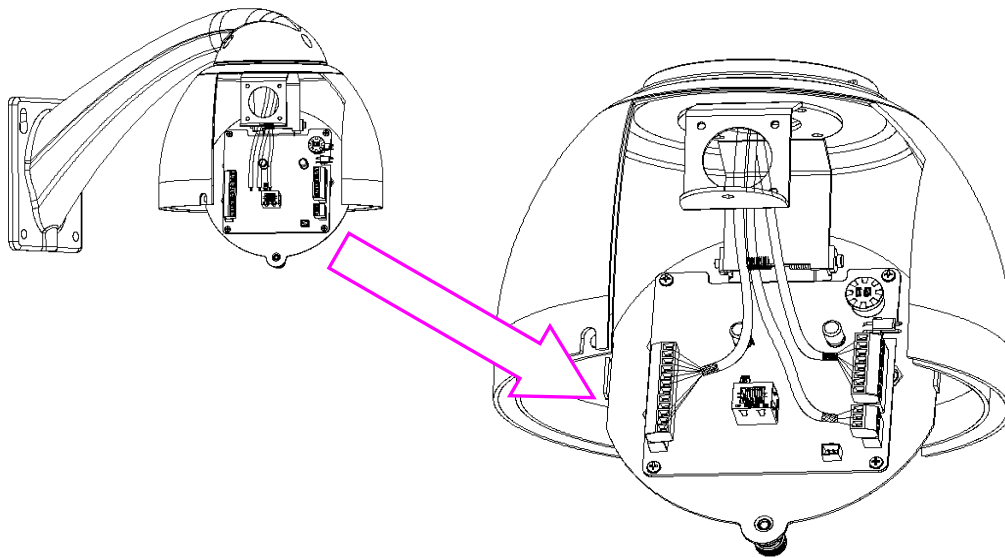


Figure 4-1

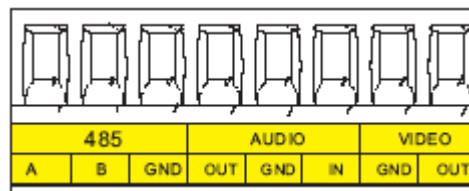


Figure 4-2

Name		Function
485	A	485-A. It is to control dome built-in PTZ.
	B	485-B. It is to control dome built-in PTZ.
	GND	Ground.
AUDIO	OUT	Reserved audio port. Audio output port.
	GND	Reserved audio port. Ground port audio.
	IN	Reserved audio port. Audio connection port.
VIDEO	GND	Ground port.
	OUT	Video output port.

Power port connection interface is shown as in Figure 3-3.

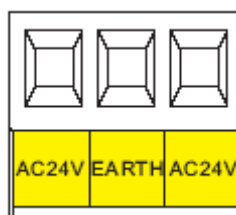


Figure 4-3

Name	Function
AC24V	24V power port. Connect to the power cable.
EARTH	Ground port.
AC24V	24V power port. Connect to power cable.

Extension RS 485 port is shown as in Figure 3-4.

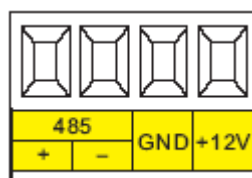


Figure 4-4

Name		Function
485	+	Extension peripheral 485 port. Such as control temperature, humidity sensor.
	—	Extension peripheral 485 port. Such as control temperature, humidity sensor.
GND		Ground port.
+12V		External device power port. Provide power the Peripheral.

## 4.2 Alarm Cable Connection

Open the dome cover and take PTZ chip core out. Turn the core upside down; you can see the alarm port. See Figure 3-5.

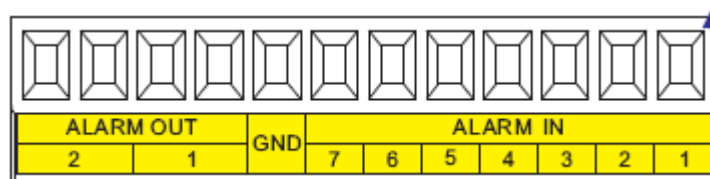


Figure 4-5

Name	Function
Alarm out: 1-2	<ul style="list-style-type: none"> <li>• Two alarm output channels. When there is an alarm from current channel, system activates relay or not.</li> <li>• Alarm output relay default setup is NO. You can use the jump-cap near the power board relay to set.</li> <li>• NO: Normal open alarm output.</li> <li>• NC: Normal close alarm output.</li> </ul>
GND	Alarm input ground end.
Alarm in: 1-7	<ul style="list-style-type: none"> <li>• Seven alarm input channels. It is to receive relay signal from the external alarm source. You can go to dome menu to activate specified preset or patter.</li> <li>• When the activation mode is NO (normal open), dome alarms when there is low voltage. High voltage will not activate the alarm.</li> <li>• When the activation mode is NC (normal close), dome alarms when there is high voltage. Low voltage will not activate the alarm.</li> </ul> <p>Note:</p> <ul style="list-style-type: none"> <li>● Dome alarm input message is ground mode.</li> <li>● Dome alarm input signal are two modes: normal open and normal close.</li> </ul>

**Slight difference may be found in the user interface.**

**All the designs and software are subject to change without prior written notice.**

**Please visit our website for more information.**